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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/766,162      | 01/19/2001  | Donald S. Gardner    | 42390P10775         | 9142             |

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EXAMINER

NGUYEN, TUYEN T

ART UNIT

PAPER NUMBER

2832

DATE MAILED: 04/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                |
|------------------------------|--------------------------------------|--------------------------------|
| <b>Office Action Summary</b> | Application No.<br><b>09/766,162</b> | Applicant(s)<br><b>Gardner</b> |
|                              | Examiner<br><b>Tuyen T. Nguyen</b>   | Art Unit<br><b>2832</b>        |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)  Responsive to communication(s) filed on Jan 16, 2003

2a)  This action is FINAL. 2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

**Disposition of Claims**

4)  Claim(s) 5-9, 11, and 18 is/are pending in the application.

4a) Of the above, claim(s) 11 and 18 is/are withdrawn from consideration.

5)  Claim(s) \_\_\_\_\_ is/are allowed.

6)  Claim(s) 5-9 is/are rejected.

7)  Claim(s) \_\_\_\_\_ is/are objected to.

8)  Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are a)  accepted or b)  objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)  The proposed drawing correction filed on \_\_\_\_\_ is: a)  approved b)  disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)  The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13)  Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)  All b)  Some\* c)  None of:

1.  Certified copies of the priority documents have been received.

2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

14)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a)  The translation of the foreign language provisional application has been received.

15)  Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)

4)  Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_

2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)

5)  Notice of Informal Patent Application (PTO-152)

3)  Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_

6)  Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over figures 11-12 of Mizoguchi et al. [US 6,121,852] in view of figures 23A-23B of Mizoguchi et al.

Figures 11-12 of Mizoguchi et al. discloses an inductor device comprising:

- a substrate [27];
- a first dielectric layer [26] over the substrate;
- a magnetic layer [22] over the first dielectric layer;
- a second dielectric layer [22] over the magnetic layer; and
- a generally spiral shaped conductor [24] over the second dielectric layer.

Figures 11-12 of Mizoguchi et al. discloses the instant claimed invention except for a third dielectric layer over the inductor and another magnetic layer over the third dielectric layer.

Figures 23A-23B of Mizoguchi et al. discloses an inductor including a substrate [36], a conductor [32] over the substrate, a dielectric layer [33] over the conductor and a magnetic layer [34] over the dielectric layer.

Art Unit: 2832

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to include the dielectric layer and the magnetic layer over the conductor for the purpose of stabilizing the magnetic field.

3. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over figures 11-12 of Mizoguchi et al. in view of Mizoguchi et al. [US 6,404,317].

Figures 11-12 of Mizoguchi '852 discloses the instant claimed invention except for slots being provided in the magnetic layer.

Mizoguchi et al. '317 discloses a multi-layered inductor [figure 38] including a plurality of magnetic layers and a plurality of dielectric layers with a conductor layer disposed therein, wherein the magnetic layer including a plurality of grooves/slots.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to include slots in the magnetic layer of Mizoguchi et al. '852, as suggested by Mizoguchi et al. '317, for the purpose of imparting magnetic anisotropy to the magnetic layer.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over figures 11-12 of Mizoguchi et al. in view of figures 23A-23B of Mizoguchi et al. as applied to claim 7 above, and further in view of Mizoguchi et al. [US 6,404,317].

Figures 11-12 in view of figures 23A-23B of Mizoguchi et al. '852 discloses the instant claimed invention except for slots being provided in the magnetic layer.

Art Unit: 2832

Mizoguchi et al. '317 discloses a multi-layered inductor [figure 38] including a plurality of magnetic layers and a plurality of dielectric layers with a conductor layer disposed therein, wherein the magnetic layer including a plurality of grooves/slots.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to include slots in the magnetic layer of Mizoguchi et al. '852, as suggested by Mizoguchi et al. '317, for the purpose of imparting magnetic anisotropy to the magnetic layer.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over figures 11-12 in view of figures 23A-23B of Mizoguchi et al. '852 as applied to claim 7 above, and further in view of JP 6-124843.

Figures 11-12 in view of figures 23A-23B of Mizoguchi et al. '852 discloses the instant claimed invention except for the magnetic layers being connected.

JP 6-124843 discloses a multi-layered transformer including a plurality of magnetic layers [8, 14] being connected to each other [see figure 1B].

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to connect the magnetic layers of Mizoguchi et al. '852 to each other, as suggested by JP 6-124843, for the purpose of providing a closed magnetic circuit.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mizoguchi et al. '852 in view of Fessant et al. [IEEE paper, copyrighted 1993].

Mizoguchi et al. '852 discloses the instant claimed invention except for the specific material use for the magnetic layer.

Art Unit: 2832

Fessant et al. discloses the use of amorphous CoZr thin films.

It would have been obvious to one having ordinary skilled in the art at the time the invention was made to use the materials shown by Fessant et al. for the magnetic layers of Mizoguchi et al. for the purpose of providing low coercitivity.

***Response to Arguments***

7. Applicant's arguments filed 1/16/03 have been fully considered but they are not persuasive.

Applicant argues that:

[1] There is no suggestion the combination of figures 11-12 and 23A-23B of Mizoguchi '852 to have magnetic layers on both side of the conductor.

[2] Figure 38 of Mizoguchi '317 does not show a slot.

[3] Mino does not show that two magnetic layers are connected.

[4] Fessant article discusses only a pure cobalt-zirconium alloy, without the inclusion of other material which might change the material characteristics that Fessant so laboriously analyzes.

The examiner disagrees.

Regarding [1], Mizoguchi '852 discloses [see figures 23A-23B] that two magnetic layers [34, 35] sandwiching conductor [32].

Regarding [2], Mizoguchi '317 discloses grooves/slots [column 20, lines 59-67 and column 21, lines 1-16].

Regarding [3], Mino discloses two connected magnetic layers [8 and 14].

Art Unit: 2832

Regarding [4], Fessant discloses the use of amorphous CoZr in the magnetic device.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tuyen T. Nguyen whose telephone number is (703) 308-0821.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Elvin Enad, can be reached at (703) 308-7619. The fax number for this Group is (703)872-9318 before the final office action, if the response is after final office action the fax number is (703)872-9319.

Art Unit: 2832

Any inquiry of a general nature or relating to status of this application of proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

TTN *TTN*

April 6, 2003

*Tanya T. Nguyen*